

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.-45. (Canceled).

46. (Currently Amended) A method of ~~implantation~~facilitating the growth of natural host tissue comprising the step of implanting a sample of resorbable porous silicon into a living animal or human.

47. (Currently Amended) A method according to claim 46, wherein the ~~resorbable silicon comprises a region of porous silicon having~~has a structure such that when immersed in a simulated body fluid solution the porous silicon dissolves over a period of time.

48. (Currently Amended) A method of ~~implantation~~ according to claim 46, wherein the resorbable silicon forms part of a bioactive silicon structure.

49. (Withdrawn) A method of implantation comprising the step of implanting a sample of bioactive silicon in a living animal or human.

50. (Withdrawn) A method according to Claim 49, wherein when immersed in a simulated body fluid solution held at a physiological temperature the silicon induces the deposition of a mineral deposit thereon.

51. (Withdrawn) A method according to Claim 50, wherein the mineral deposit is apatite.

52. (Withdrawn) Method according to Claim 51, wherein the apatite is continuous over at least an area of 100  $\mu\text{m}^2$ .

53. (Withdrawn) A method according to Claim 49, wherein the silicon is at least partially porous with a porosity greater than 4% and less than 70%.

54 (Withdrawn) A method according to Claim 53, wherein the porous silicon is microporous.

55. (Withdrawn) A method according to Claim 53, wherein the porous silicon is mesoporous.

56. (Withdrawn) A method according to Claim 53, wherein the porous silicon is visibly luminescent.

57. (Withdrawn) A method according to Claim 49 or Claim 53, wherein the silicon is impregnated with at least one of the following species: calcium, or sodium, or phosphorus.

58. (Withdrawn) A method according to claim 49 wherein the silicon is polycrystalline silicon.

59. (Withdrawn) A method of implantation comprising the step of implanting a bioactive silicon structure in a living animal or human.

60. (Withdrawn) A method according to Claim 59, wherein the structure comprises a porous silicon region having a porosity greater than 4% and less than 70%.

61. (Withdrawn) A method according to Claim 60, wherein the porous silicon is microporous.

62. (Withdrawn) A method according to Claim 60, wherein the porous silicon is mesoporous.

63. (Withdrawn) A method according to Claim 60, wherein the structure also includes macroporous silicon.

64. (Withdrawn) A method according to Claim 59 or Claim 60, wherein the method further comprises the step of impregnating the silicon with at least one of calcium, sodium, or phosphorus.

65. (Withdrawn) A method according to Claim 64 wherein the porous silicon is impregnated with calcium at a concentration greater than  $10^{21} \text{ cm}^{-3}$ .

66. (Withdrawn) A method according to Claim 59, wherein the structure includes resorbable silicon material.

67. (Withdrawn) A method according to Claim 59 wherein the structure comprises a region of polycrystalline silicon.

68. (Withdrawn) A method of implantation comprising the step of implanting a sample of biocompatible silicon into a living animal or human.

69. (Withdrawn) A method according to Claim 68, wherein when immersed in a simulated body fluid solution held at a physiological temperature the silicon induces the deposition of a mineral deposit thereon.

70. (Withdrawn) A method of accelerating or retarding the rate of deposition of a mineral deposit on silicon in a physiological electrolyte wherein the method comprises the application of an electrical bias to the silicon.

71. (Withdrawn) A method according to Claim 69, wherein the silicon is porous silicon.

72. (Withdrawn) A method of implantation comprising the step of implanting a sample of a bioactive material into a living animal or human, wherein the bioactivity of the material is controllable by the application of an electrical bias to the material.

73. (Withdrawn) A method of implantation comprising the step of implanting a sample of a bioactive electrically conductive material into a living animal or human.